

REMARKS/ARGUMENTS

Claims 1–70 are in this application. Claims 1, 15, 24, 38, 47, 50, 58, 64 and 70 have been amended to clarify claim scope. No new matter has been added. In the Office Action mailed on October 31, 2006, the Examiner rejected claims 1, 24, 38, 58 and 64 pursuant to 35 U.S.C. § 112 as failing to comply with the written description requirement. The Examiner rejected claims 1-9, 11-13, 14-24, 27-31, 33-38, 43-58, and 61-69 pursuant to 35 U.S.C. § 102(e) as being anticipated by U.S. No. 6,445,927 filed September 18, 2000 by King et al. (King). The examiner rejected claims 25-26, and 41-42 pursuant to 35 U.S.C. § 103(a) as being anticipated by King in view of U.S. Patent Application No. 2003/0236818, filed June 25, 2002, by Bruner et al. (Bruner). The examiner rejected claims 10, 14, and 32 pursuant to 35 U.S.C. § 103(a) as being obvious over King in view of U.S. Patent No. 6,707,422, filed November 13, 2001, and issued to Sheynblat et al. (Sheynblat). The Examiner rejected claims 39-40 and 59-60 pursuant to 35 U.S.C. § 103(a) as being obvious over King. The Examiner failed to acknowledge claim 70 by either rejecting or allowing claim 70. Applicant respectfully traverses the examiner's rejections.

35 U.S.C. §112

The Examiner rejected claims 1, 24, 38, 58 and 64 pursuant to 35 U.S.C. § 112 as allegedly failing to comply with the written description requirement. The term “average” system time bias has been replaced with “common” system time bias. “Common” system time bias as well as “system-wide” synchronization bias is clearly described throughout Applicant's written specification.

35 U.S.C. §102(e): King et al.

The Examiner rejected claims 1-9, 11-13, 14-24, 27-31, 33-38, 43-58, and 61-69 pursuant to 35 U.S.C. § 102(e) as being anticipated by King. The pertinent independent claims are claims 1, 15, 24, 38, 47, 50, 58, 61 and 64. Applicant respectfully traverses the Examiner's rejections for the reasons detailed below.

As amended, Claim 1 includes the feature of determining a position solution for a mobile unit as a function of the received signals using a **common system** synchronization bias that defines a difference between a system time for the satellite navigation system and a

system time for the wireless communication system, **wherein the wireless communication system comprises more than one base station.**

As amended Claim 15 includes the feature of receiving a request from a mobile unit operating within an environment having a satellite navigation system and a wireless communication system, **wherein the wireless communication system comprises more than one base station**; communicating to the mobile unit, in response to the request, **common system synchronization bias data** that constrains a system time of the satellite navigation system as a function of a system time of the wireless communication system; and computing, a position solution for the mobile unit as a function of the **common system synchronization bias data**.

As amended Claim 38 includes the features of a server to store **common system synchronization bias data** that defines a difference between a system time for a satellite navigation system and a system time for a wireless communication system, **wherein the wireless communication system comprises more than one base station**; and a device to receive the **common system synchronization bias data** from the server, and determine a position solution as a function of the **common synchronization bias data** and signals received from the satellite navigation system and the wireless communication system

As Amended Claim 47 includes the features of receiving signals at a device from a plurality of systems having synchronous system times; and determining a position solution for the device as a function of the signals and a **common system synchronization bias** that defines a difference between the system times, **wherein the systems comprise more than one system element.**

As Amended Claim 50 includes the features of A computer-readable medium comprising instructions to cause a processor to determine a position solution for a mobile unit as a function of signals received from a satellite navigation system, signals received from a wireless communication system, and a **common system synchronization bias** that defines a difference between system times for the satellite navigation system and the wireless communication system, **wherein the wireless communication system comprises more than one base station.**

As Amended Claim 58 includes the features of a computer-readable medium comprising a data structure to store one or more **common synchronization biases** for computing position solutions for one or more mobile units, where each of the **common**

synchronization biases defines a difference between a system time for a satellite navigation system and a system time for a wireless communication system, **wherein the wireless communication system comprises more than one base station**.

Claim 61 includes the features of receiving sets of position related measurements for a device, the measurements of each of the sets having a **common system** bias with respect to the measurements of the other set, and **computing** a position solution for the device as a function of the measurements and the **common** bias.

As amended Claim 64 includes the features of receiving sets of position related measurements for a device from a plurality of systems; determining different system times for each of the systems **according to a common system bias**; and determining a position solution for the device as a function of the measurements and the system times.

As amended Claim 70 includes the features of receiving signals from a satellite navigation system and signals from a wireless communication system, **wherein the wireless communication system comprises more than one base station**; computing a **common synchronization time bias** for the wireless communication system; and **independently and concurrently computing** a position solution for a mobile unit as a function of the received signals.

These features are neither taught nor disclosed by King. Applicant respectfully submits that the Examiner has neither carefully examined, nor fully comprehended, the technical aspects distinguishing King from Applicant's claimed invention. Because the Examiner does not understand in detail the object and technical specifics of the King patent, the Examiner mistakes a well known problem common to positioning systems described in both references for a common solution to this problem. Both the King reference and Applicant acknowledge that time bias in a terrestrial network is a source of positioning errors, and that the errors need to be removed. Here however, the similarity between King and Applicant's claimed invention ends. King discloses one approach for removing time bias errors from position solutions, while Applicant teaches an entirely separate and distinct approach for removing time bias errors from position solutions. The Examiner argues lack of novelty by incorrectly citing and technically misinterpreting the King reference throughout the Response to Arguments.

King does not enable or suggest a method for determining a position solution for a mobile unit as a function of a common synchronization time bias data between a wireless

communication system time bias and a satellite system time. Applicant invites the Examiner to carefully read the King reference in order to understand that King's "perceived time bias" is specific to one individual base station, rather than a time bias common to every base station in a system as disclosed by Applicant. Not only is King's "perceived time bias" specific to one, and only one, base station, it also varies with mobile station position and time. (See at least Column 4, Lines 44-51.) King's "perceived time bias" is clearly detailed as a function of a specific base station AND the position of the mobile at any given time. (See at least Column 4, lines 44-50.) Nowhere does King enable or suggest that the "perceived time bias" is calculated to be the same for, and applied to every base station in a system at all times, as taught and claimed by Applicant.

The Examiner incorrectly states that King discloses "determining a position solution for a mobile unit (see col. 3 lines 47-60) as a function of the received signals using a system synchronization bias (see col. 8 lines 36-59) that defines a difference between a system time for the satellite navigation system and a average system time for the wireless communication system (see col. 8 lines 60-61, "sum" corresponds to "average")." The Examiner is grossly incorrect. The "sum" disclosed by King is wholly unrelated to an average, or common, system time bias applied to every base station in a system as disclosed by applicant. In Column 3, lines 53-58, King clearly defines b' (for one base station) as "the sum of spatial error from multipath in addition to the fixed error induced by cable delays, internal BS harnessing, software processing, clock source distribution, and other factors." In other words, King's "sum", b' , is all the factors contributing to timing errors in one base station added together to produce an individual aggregate timing error for that base station as perceived by a mobile station in a particular location at a given point in time. King's "sum" is several different sources of signal delay lumped into one value, b' , NOT a sum, average, or common bias for every base station in a system as disclosed by Applicant (paragraph 0023).

King then uses this information to look up b' for a given base station at the current mobile station position to determine the position of the base station and the perceived time bias for that base station, which then may be iteratively used to improve a position measurement. (See Column 4, Lines 6-43) King does NOT simultaneously compute a common synchronization time bias for an entire wireless communication system while independently and concurrently computing a position solution for a mobile unit in the same set of matrix equations as disclosed and claimed by Applicant (paragraph 0025). The

Examiner's citations of King in no way correspond to the concurrent calculation of a common system synchronization time bias and a mobile station position in the same set of math.

Further examples of the Examiner's misunderstanding of the King reference are evident in the Examiners citations of King's "perceived time bias map" (col. 8, lines 60-61). King's "perceived time bias map, as disclosed in Column 8, Lines 36- 62, is a radio fingerprint of b' sums (defined in col. 3, lines 53-58), rather than a common system time bias.

Applicant teaches and claims a synchronization time bias as a single time bias quantity, which is the same for all base stations in a given mobile station position calculation, and does not vary with mobile station position or time. The time bias disclosed by Applicant is not a function of any individual base station as taught by King, but is rather one value for a position location solution throughout a whole communication system.

The Examiner's detailed argument for lack of novelty in view of King, rife with incoherent language and incorrect technical statements, is followed by overreaching and equally nugatory obviousness arguments in an effort to reject Applicant's dependent claims.

The limitations of independent claims 1, 15, 24, 38, 47, 50, 58, 61 and 64 are not found in King. Therefore, Applicant respectfully submits that claims 1, 15, 24, 38, 47, 50, 58, 61 and 64, and the claims dependent thereon (claims 2-14, 16-23, 25-37, 39-46, 48-49, 51-57, 59-60, 62-63 and 65-69), constitute patentable subject matter in view of King.

35 U.S.C. §103(a): King et al. in View of Bruner et al.

The examiner rejected claims 25-26, and 41-42 pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over King in view of Bruner. The pertinent independent claims are claims 24 and 38. In view of the arguments detailed above with respect to independent claims 24 and 38, Applicant submits that dependent claims 25-26 and 41-42 constitute patentable subject matter in view of the cited reference. Applicant further respectfully submits that the Examiner has not provided a proper *prima facie* case of obviousness because there is no suggestion or teaching to combine King with Bruner in a manner that would render claims 25-26 and 41-42 unpatentable.

35 U.S.C. §103(a): King in View of Sheynblat

The examiner rejected claims 10, 14, and 32 pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over King in view of Sheynblat. The pertinent independent claims are claims 1 and 24. In view of the arguments detailed above with respect to independent claims 1 and 24, Applicant submits that dependent claims 10, 14 and 22 constitute patentable subject matter in view of the cited reference. Applicant further respectfully submits that the Examiner has not provided a proper *prima facie* case of obviousness because there is no suggestion or teaching to combine Edge with Sheynblat in a manner that would render claims 10, 14 and 24 unpatentable.

35 U.S.C. §103(a): King

The examiner rejected claims 39-40 and 59-60 pursuant to 35 U.S.C. § 103(a) as allegedly being unpatentable over Edge. The pertinent independent claims are claims 15 and 58. In view of the arguments detailed above with respect to independent claims 15 and 58, Applicant submits that dependent claims 39-40 and 59-60 constitute patentable subject matter in view of the cited reference.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Applicant therefore respectfully requests that a timely Notice of Allowance be issued in this case.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of the application, the Examiner is invited to telephone the undersigned at the number provided.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 17-0026. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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